

Appl. No. 10/774,166
Amdt. Dated 07-29-2005
Reply to Office action of 06-14-2005

REMARKS/ARGUMENTS

Claims 1-13 are pending in the present application.

This Amendment is in response to the Office Action mailed June 14, 2005. In the Office Action, the Examiner rejected claims 1-11 under 35 U.S.C. §102(e). In addition, the Examiner indicated allowable subject matter for claims 12 and 13 if they are rewritten in independent form including all of the limitations of the base claim and any intervening claims. Reconsideration in light of the remarks made herein is respectfully requested.

Election/Restrictions

1. In the Office Action, the Examiner states that claims 14-19 are withdrawn from further consideration. Applicants believe that it was a typographical error. Claims 20-25 are withdrawn, not claims 14-19.

Rejection Under 35 U.S.C. § 102

1. In the Office Action, the Examiner rejected claims 1-11 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,524,935 issued to Canaperi et al. ("Canaperi"). Applicants respectfully traverse the rejection and contend that the Examiner has not met the burden of establishing a prima facie case of anticipation.

Canaperi discloses preparation of strained Si/SiGe on insulation by hydrogen induced layer transfer technique. An epitaxial graded layer 20 of $\text{Si}_{1-x}\text{Ge}_x$ is formed on a substrate. The upper surface of the layer 20 is substantially or completely relaxed (Canaperi, col. 3, lines 31-36). An epitaxial layer 30 is comprised substantially or completely of relaxed $\text{Si}_{1-y}\text{Ge}_y$ and is formed on upper surface 22 of layer 20 (Canaperi, col. 3, lines 49-51).

Canaperi does not disclose, either expressly or inherently, (1) a first wafer having a stack structure of a first base substrate, a layer of relaxed film, and a first layer of strained film; (2) depositing a layer of oxide onto the layer of strained film to provide an adhesion surface to the first wafer; (3) second wafer being a silicon on insulation (SOI) wafer having a stack structure of a second base substrate and a layer of oxidized film; and (4) heating the first and second wafers at a first temperature to cause a silicon dioxide (SiO_2) adhesion of the first substrate to the second substrate.

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In the Office Action, the Examiner states that Canaperi teaches the claimed limitations, citing Canaperi, column 3, lines 25-65 (Office Action, page 2, paragraph number 1). Applicants respectfully disagree. Canaperi merely discloses two layers (layers 20 and 30) of substantially or completely of relaxed $\text{Si}_{1-y}\text{Ge}_y$, not a layer of relaxed film and a layer of strained film.

The Examiner further states that Canaperi discloses heating the first and second wafers at a first temperature to cause a silicon dioxide (SiO_2) adhesion of the first substrate to the second substrate, citing Canaperi, column 6, lines 10-20 (Office Action, page 3, lines 1-2). Applicants respectfully disagree. For ease of reference, the cited portion is repeated below.

"In an alternate embodiment, structure 82' includes substrate 80 with an insulator layer 83 between substrate 80 and layer 40 which is shown in FIG. 5. The insulator layer 83 may be deposited or formed via PECVD, LPCVD, UHV CVD, thermal oxidation or spin-on techniques. Insulator layer 83 may comprise a material selected from the group consisting of SiO_2 , Si_3N_4 , Al_2O_3 , or other acceptable or qualified low-k dielectric materials, for example, Diamond Like Carbon (DLC), Fluorinated Diamond Like Carbon (FDLC), a polymer of Si, C, O, and H such as SiCOH or a combination of any two or more of the foregoing materials. The deposition temperature is below 900°C ."

(Canaperi, Column 6, lines 10-20)

As clearly seen from the above, Canaperi merely discloses forming or depositing the insulator layer 83 using PECVD, LPCVD, UHV CVD, thermal oxidation or spin-on techniques. This is not the same as heating the first and second wafers to cause silicon dioxide adhesion.

To anticipate a claim, the reference must teach every element of a claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Vergegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). Since the Examiner failed to show that Canaperi teaches or discloses any one of the above elements, the rejection under 35 U.S.C. §102 is improper.

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Therefore, Applicants believe that independent claim 1 and its respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicants respectfully request the rejection under 35 U.S.C. §102(e) be withdrawn.

Allowable Subject Matter

1. In the Office Action, the Examiner indicated allowable subject matter for claims 12 and 13 if they are rewritten in independent form including all of the limitations of the base claim and any intervening claims (Office Action, page 4). However, in light of the above arguments and remarks, Applicants respectfully request the objections to claims 12-13 be withdrawn.

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Conclusion

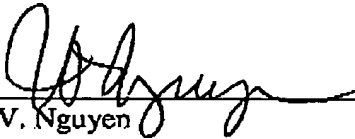
Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: July 29, 2005

By


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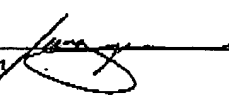
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